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**Image Reconstruction Is a New Frontier of Machine Learning**

**Abstract**

Over past several years, machine learning, or more generally artificial intelligence, has generated overwhelming research interest and attracted unprecedented public attention. As tomographic imaging researchers, we share the excitement from our imaging perspective [item 1) in the Appendix], and organized this special issue dedicated to the theme of “Machine learning for image reconstruction.” This special issue is a sister issue of the special issue published in May 2016 of this journal with the theme “Deep learning in medical imaging” [item 2) in the Appendix]. While the previous special issue targeted medical image processing/analysis, this special issue focuses on data-driven tomographic reconstruction. These two special issues are highly complementary, since image reconstruction and image analysis are two of the main pillars for medical imaging. Together we cover the whole workflow of medical imaging: from tomographic raw data/features to reconstructed images and then extracted diagnostic features/readings.